INTEST CORP
Form 10-K
March 26, 2019

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018
OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-36117

inTEST Corporation
(Exact name of registrant as specified in its charter)

DELAWARE (State or Other Jurisdiction of Incorporation or Organization)	**22-2370659** (I.R.S. Employer Identification Number)
804 EAST GATE DRIVE, SUITE 200 **MT. LAUREL, NEW JERSEY** (Address of Principal Executive Offices)	**08054** (Zip Code)

Registrant's telephone number, including area code: (856) 505-8800

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value $0.01 per share	NYSE American

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company, or emerging growth company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
	Emerging growth company

If an emerging growth company, indicate by checkmark if the registrant has elected not to use the extended transition period for complying with any new or revised financial account standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold on June 30, 2018 (the last business day of the registrant's most recently completed second fiscal quarter), was: $73,323,770.

The number of shares outstanding of the registrant's Common Stock, as of March 15, 2019, was 10,570,258.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement of the Registrant for the Registrant's 2019 Annual Meeting of Stockholders, to be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year covered by this Report, are incorporated by reference into Part III of this Report.

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Cautionary Statement Regarding Forward-Looking Statements

From time to time, we make written or oral "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including statements contained in our filings with the Securities and Exchange Commission (“SEC”) (including this Annual Report on Form 10-K (“Report”)), in our annual report to stockholders and in other communications. These statements do not convey historical information, but relate to predicted or potential future events, such as statements of our plans, strategies and intentions, or our future performance or goals, that are based on management’s current expectations. Our forward-looking statements can often be identified by the use of forward-looking terminology such as "believes," "expects," "intends," "may," "will," "should," "plans," “projects,” “forecasts,” “outlook” or "anticipates" or similar terminology, and include, but are not limited to, statements made in this Report regarding:

- the possibility of future acquisitions or dispositions and the successful integration of any acquired operations;
- the ability to borrow funds or raise capital to finance major potential acquisitions;
- the success of our strategy to diversify our business by entering markets outside the semiconductor and automated test equipment (“ATE”), markets, including the automotive, consumer electronics, defense/aerospace, energy, industrial, telecommunications and other markets;
- indications of a change in the market cycles in the semiconductor and ATE markets or other markets we serve;
- developments and trends in the semiconductor and ATE markets, including changes in the demand for semiconductors;
- competitive pricing pressures;
- the development of new products and technologies by us or our competitors;
- effects of exchange rate fluctuations;
- general economic conditions both domestically and globally;
- changes in the rate of, and timing of, capital expenditures by our customers;
- progress of product development programs;
- the anticipated market for our products;
- the availability of materials used to manufacture our products, including increases in raw material and fabrication costs associated with our products;
- the availability of and retention of key personnel;
- net revenues generated by foreign subsidiaries;
- the sufficiency of cash balances, lines of credit and net cash from operations;
- stock price fluctuations; and
- other projections of net revenues, taxable earnings (loss), net earnings (loss), net earnings (loss) per share, capital expenditures and other financial items.

Investors and prospective investors are cautioned that such forward-looking statements are only projections based on current estimations. These statements involve risks and uncertainties and are based upon various assumptions. We discuss many of these risks and uncertainties under Item 1A "Risk Factors," below, and elsewhere in this Report. These risks and uncertainties, among others, could cause our actual future results to differ materially from those described in our forward-looking statements or from our prior results. Any forward-looking statement made by us in this Report is based only on information currently available to us and speaks to circumstances only as of the date on which it is made. We are not obligated to update these forward-looking statements, even though our situation may change in the future.

PART I

Item 1. BUSINESS

INTRODUCTION

In this report, "we," "us," "our," and the "Company" refer to inTEST Corporation and its consolidated subsidiaries. We are an independent designer, manufacturer and marketer of thermal management products and ATE interface solutions which are used by semiconductor manufacturers to perform development, qualifying and final testing of integrated circuits (“ICs”) and wafers, and for other electronic test across a range of industries including the automotive, defense/aerospace, energy, industrial, telecommunications and other markets. We also offer induction heating products for joining and forming metals in a variety of industrial markets, including automotive, aerospace, machinery, wire & fasteners, medical, semiconductor, food & beverage, and packaging. Our high-performance products are designed to enable our customers to improve the efficiency of their test and manufacturing processes and, consequently, their profitability.

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We sell our products worldwide. Within the ATE market, we sell our products both directly to major semiconductor manufacturers and semiconductor test subcontractors and indirectly through leading ATE manufacturers. In markets outside the ATE market, we sell our products directly to the end user of the product or through third party distributors. Our largest customers include Aixtron SE, Analog Devices, Inc., Foxconn Optical Interconnect Technologies, Inc., GT Advanced Technologies Incorporated, Hakuto Co. Ltd., LPE S.p.A., NXP Semiconductors N.V., Raytheon Company, Rosendahl Nextrom GmbH, and Texas Instruments Incorporated.

The consolidated entity is comprised of inTEST Corporation (parent) and our wholly-owned subsidiaries. inTEST Corporation was incorporated in New Jersey in 1981 and reincorporated in Delaware in April 1997. We have two reportable segments, which are also our reporting units, Thermal Products ("Thermal") and Electromechanical Semiconductor Products ("EMS").

On May 24, 2017, we completed the acquisition of Ambrell Corporation (“Ambrell”) for $22.0 million in cash paid at the closing. Subsequent to the closing, we paid an additional $18.0 million in earnouts based on the 2017 and 2018 adjusted EBITDA of Ambrell, as discussed further in Note 3 to our consolidated financial statements included in Item 8 of this Report on Form 10-K. The acquisition was completed by acquiring all of the outstanding capital stock of Ambrell. Ambrell is a manufacturer of precision induction heating systems which are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets. Ambrell's operations are included in our Thermal segment. Ambrell manufactures its products in the U.S. and conducts marketing and support activities from its facilities in the U.S., the Netherlands and the U.K.

MARKETS

Overview

Our business is grounded in the ATE market, which provides automated test equipment to the semiconductor market. While the ATE market remains a key driver in our business, we have taken actions over the last ten years to diversify our served markets to address the thermal test requirements of several other markets outside the semiconductor market as well as certain thermal process industrial requirements. The markets we have targeted outside the semiconductor market include the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. Prior to the acquisition of Ambrell in May 2017, we offered only highly specialized engineering solutions used for testing applications in the markets outside the semiconductor market, the demand for which is limited and which varies significantly from period to period. Our acquisition of Ambrell not only provided expansion into new markets, but also broadened our product offerings to include products sold into process or manufacturing applications. Historically, Ambrell sold its precision induction heating systems almost exclusively to customers in the industrial market, which is a non-semiconductor market, but since 2018 has also had significant sales into the semiconductor market. Overall, however, the acquisition of Ambrell has reduced our dependence on customers in the semiconductor market. We expect that our future orders and net revenues will be approximately equally split between the semiconductor and non-semiconductor markets. During 2018 and 2017, our net revenues in markets outside the semiconductor market were $33.2 million (including $19.1 million of net revenues attributable to Ambrell) and $29.0 million (including $13.2 million of net revenues attributable to Ambrell), respectively, and represented 42% and 44%, respectively, of our total net revenues. In the five years prior to the acquisition of Ambrell, our net revenues from sales in markets outside the semiconductor market ranged from 18% to 30%.

The level of our net revenues in the various markets we serve outside the semiconductor market varies significantly

from market to market. During 2018 and 2017, our net revenues from the industrial market represented 27% and 21%, respectively, of our total net revenues, while our net revenues from the telecommunications market represented 7% and 15%, respectively of our total net revenues for both years and our net revenues from the defense/aerospace market represented 6% and 5%, respectively, of our total net revenues. The level of our net revenues in these non-semiconductor markets has varied significantly in the past and we expect will vary significantly in the future as we build our presence in these markets and establish new markets for our products. One of our goals is to further expand our sales in these markets outside the semiconductor market; however, due to the highly specialized nature of many of our product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets and therefore, do not anticipate developing meaningful market shares in most of these non-semiconductor markets. Consequently, we are continuing to evaluate buying patterns and opportunities for growth in these markets that may affect our performance.

Outside of the semiconductor market, we have developed a meaningful market share in two markets: the optical transceiver market (which is a subset of the broad telecommunications market) and the induction heating market for systems with 500KW or less of power. In contrast to the semiconductor or ATE markets where we serve a broad range of customers and where our business trends follow the overall market trends within the semiconductor or ATE markets, in the optical transceiver submarket and the industrial markets where induction heating products are used, we only serve a limited number of market participants, which represent only a portion of these markets and, therefore, market trends in these areas do not have as material an impact on our financial results. The following discussion of our markets is limited to the ATE and semiconductor markets, which currently represent the majority of our net revenues.

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Semiconductor and ATE Markets

Historically, the semiconductor market has been characterized by rapid technological change, wide fluctuations in demand and shortening product life cycles. Designers and manufacturers of a variety of electronic and industrial products, such as cell phones, telecom and datacom systems, Internet access devices, computers, transportation and consumer electronics, require increasingly complex ICs to provide improved end-product performance demanded by their customers. Semiconductor manufacturers generally compete based on product performance and price. We believe that testing costs represent a significant portion of the total cost of manufacturing ICs. Semiconductor manufacturers remain under pressure to maximize production yields and reduce testing costs. At the same time, the growing complexity of ICs has increased the difficulty of maximizing test yields. In order to address these market trends, semiconductor manufacturers strive for more effective utilization of ATE, smaller test areas and increased wafer level testing.

Demand for new ATE and related equipment depends upon several factors, including the demand for products that incorporate ICs, the increasing complexity of ICs and the emergence of new IC design, production and packaging technologies. Some of the evolutionary changes in IC technologies included the shift to 300 mm wafers in production, system-on-a-chip (“SOC”) where digital, analog and memory functions are combined on a single IC, and chip scale packaging. As a result of these and other advances, semiconductor manufacturers may require additional ATE not only to handle increases in production but also to handle the more sophisticated testing requirements of ICs.

IC Test Process

Semiconductor manufacturers typically produce ICs in multiples of several hundred or more on a silicon wafer which is later separated or "diced" into individual ICs. Extended leads are then attached to the individual ICs for later connection to other electrical components. In most cases, the ICs are then encapsulated in a plastic, ceramic or other protective housing. These process steps are called "packaging."

Wafers are tested before being diced and packaged, to ensure that only properly functioning ICs are packaged. This testing step has several names, including "front-end test," "wafer test," "wafer probe" or "wafer sort." In front-end test, an electronic handling device known as a wafer prober automatically positions the wafer under a probe card which is electronically connected to a "test head," which connects electrically to a test system. During front-end testing, there is a growing trend of thermally conditioning the wafer during test. Once the good ICs have been identified, they are packaged.

The packaged ICs also require testing, called "back-end test" or "final test," to determine if they meet design and performance specifications. Packaged ICs are tested after loading into another type of electronic handling device called a "package handler" or "handler," which then transfers the packaged ICs into a test socket which is attached to the test head. These handlers may be temperature controlled for testing. "Wafer probers" and "handlers" are sometimes referred to in this Report collectively as "electronic device handlers."

Testers range in price from approximately $100,000 to over $2.0 million each, depending primarily on the complexity of the IC to be tested. Probers and handlers range in price from approximately $50,000 to $500,000 each. A typical test floor of a large semiconductor manufacturer may have 100 test heads and 100 probers or 250 handlers supplied by various vendors for use at any one time. While larger global semiconductor manufacturers typically purchase ATE to test the ICs they manufacture, there are a growing number of semiconductor manufacturers who outsource IC testing to third-party foundries, test and assembly providers.

Test head manipulators, also referred to as positioners, facilitate the movement of the test head to the electronic device handler. Docking hardware mechanically connects the test head to the wafer prober or handler. Tester interface products provide the electrical connection between the test head and the wafer or packaged IC. Traditionally, temperature management products are used in back-end test to allow a manufacturer to test packaged ICs under the extreme temperature conditions in which the IC may be required to operate. However, we believe that temperature-controlled testing will be an increasingly important part of front-end wafer testing as more parameters traditionally tested in back end-test are moved to front-end test.

Trends in IC Testing

ATE is used to identify unacceptable packaged ICs and bad die on wafers. ATE assists IC manufacturers in controlling test costs by performing IC testing in an efficient and cost-effective manner. In order to provide testing equipment that can help IC manufacturers meet these goals, we believe the ATE market must address the following issues:

Change in Technology. End-user applications are demanding ICs with increasingly higher performance, greater speeds, and smaller sizes. ICs that meet these higher standards, including SOC designs, are more complex and dense. These technology trends have significant implications for the IC testing process, including:

- the need for test heads of higher complexity;
- higher signal densities;
- increasing test speeds; and
- a new generation of testers for SOC and other technologies.

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Need for Plug-Compatibility and Integration. Semiconductor manufacturers need test methodologies that will perform increasingly complex tests while lowering the overall cost of testing. This can require combining ATE manufactured by various companies into optimally performing systems. Semiconductor manufacturers have to work closely with various test hardware, software, interface and component vendors to resolve design and compatibility issues in order to make these vendors' products plug-compatible with test equipment manufactured by other vendors.

Testing Under Extreme Conditions. ICs will have to perform across a wider spectrum of temperature and environmental conditions than ever before because of the growing complexity of products in which they are deployed. In recent years, temperature testing has found an increasing role in front-end, wafer-level testing. Creating a uniform thermal profile over much larger wafer areas represents a significant engineering and design challenge for ATE manufacturers.

Demand for Higher Levels of Technical Support. As IC testing becomes more complex, semiconductor manufacturers demand higher levels of technical support on a routine basis. ATE manufacturers must commit appropriate resources to technical support in order to develop close working relationships with their customers. This level of support also requires close proximity of service and support personnel to customers' facilities.

Cost Reduction Through Increased Front-End Testing. As the cost of testing ICs increases, semiconductor manufacturers will continue to look for ways to streamline the testing process to make it more cost-effective, such as the trend to use massive parallel testing, in which semiconductor manufacturers test multiple ICs on the wafer simultaneously. We believe that this factor will lead to more front-end, wafer-level testing.

OUR SOLUTIONS

Historically, we have focused our development efforts on designing and producing high quality products that provide superior performance and cost-effectiveness. We have sought to address each manufacturer's individual needs through innovative and customized designs, use of the best materials available, quality manufacturing practices and personalized service. We have designed solutions to overcome the evolving challenges facing the ATE market and other markets that we serve, which we believe provide the following advantages:

Temperature-Controlled Testing. Our Thermostream(R) products are used by manufacturers in a number of markets to stress test a variety of semiconductor and electronic components, printed circuit boards and sub-assemblies. Factors motivating manufacturers to use temperature testing include design characterization, failure analysis and quality control as well as determining performance under extreme operating temperatures, all of which contribute to manufacturing cost savings. Our acquisitions of Sigma Systems Corporation ("Sigma"), in October 2008, and Thermonics, Inc. ("Thermonics"), in January 2012, significantly increased our product offerings in the area of temperature-controlled testing and enabled us to begin serving customers in other markets outside the ATE market. Sigma's thermal platforms and temperature chambers can accommodate large thermal masses and are found in both laboratory and production environments. Thermonics' products provide a range of precision temperature forcing systems and have been melded into Temptronic's ATS ThermoStream product line. The Thermonics brand is now used to market a family of process chillers for test and industrial applications.

Induction Heating. Our acquisition of Ambrell added induction heating capabilities to our product offerings, which can be used by customers in process applications where precision controlled heating is needed. Customers use our induction heating products in conjunction with other technologies in various manufacturing environments to improve

production efficiencies. Applications for our EKOHEAT(R) or EASYHEAT™ induction heating products include annealing, bonding, brazing, curing, forging, heat treating, melting, shrink-fitting and testing.

Scalable, Universal, High Performance Interface Technology. Our universal test head manipulators provide a high degree of positioning flexibility with a minimum amount of effort. As a result, our products can be used in virtually any test setting. Our manipulator products are designed to accommodate the increased size of test heads. Our docking hardware products offer precise control over the connection to test sockets, probing assemblies and interface boards, reducing downtime and minimizing costly damage to fragile components. Our tester interface products optimize the integrity of the signals transmitted between the test head and the device under test by being virtually transparent to the test signals. This results in increased accuracy of the test data and may thus enable improved test yields. We believe that these characteristics will gain even more significance as testing becomes even more demanding.

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Compatibility and Integration. A hallmark of our products has been, and continues to be, compatibility with a wide variety of ATE. Our manipulator and docking hardware products are all designed to be used with otherwise incompatible ATE. We believe this integrated approach to ATE facilitates smooth changeover from one tester to another, longer lives for interface components, better test results, increased ATE utilization and lower overall test costs.

Worldwide Customer Service and Support. We have long recognized the need to maintain a physical presence near our customers' facilities. As of December 31, 2018, we had domestic manufacturing facilities in California, Massachusetts, New Jersey and New York and provided service to our customers from sales and service personnel based in the U.S., Europe and Asia. Our engineers are easily accessible to, and can work directly with, most of our customers from the time we begin developing our initial proposal, through the delivery, installation and use of the product by our customer. In this way, we are able to develop and maintain close relationships with our customers.

OUR STRATEGIES

We remain committed to our goals of being recognized in our markets as the designer and manufacturer of the highest quality and most cost-effective products and becoming the key supplier of all of our customers' product needs. Our strategies to achieve these goals include the following:

Pursuing Synergistic Acquisitions. A key element of our growth strategy has been to acquire businesses, technologies or products that are complementary to our current product offerings. Since our initial public offering, we have acquired several businesses which have enabled us to expand our line of product offerings and have given us the opportunity to market a broader range of products to our customer base. In particular, the acquisitions of Temptronic in 2000, Sigma in 2008, Thermonics in 2012 and Ambrell in 2017 have provided access to markets that are less sensitive to cyclicality than the semiconductor market. We seek to make acquisitions that will further expand our product lines as well as increase our exposure to markets outside of the semiconductor market.

Pursuing Revenue Growth Opportunities Outside the Semiconductor ATE Market. Another element of our growth strategy is to pursue revenue growth opportunities in markets we have not traditionally served, such as the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. We believe that we may be able to reduce some of the cyclicality that we have historically experienced by further diversifying our revenue streams outside the semiconductor ATE market. We see the most potential for this within our Thermal segment. During 2018 and 2017, approximately $33.2 million (including $19.1 million of net revenues attributable to Ambrell), or 42%, and $29.0 million (including $13.2 million of net revenues attributable to Ambrell), or 44%, respectively, of our total net revenues were derived from markets outside semiconductor, as noted above. These revenues were all generated by our Thermal segment. We cannot determine at this time whether we will be successful in building our sales in these non-traditional markets or what the growth rate of our sales in these markets will be in future periods.

Providing Technologically Advanced Solutions. We are committed to designing and producing only the highest quality products which incorporate innovative designs to achieve optimal cost-effectiveness and functionality for each customer's particular situation. Our engineering and design staff is continually engaged in developing new and improved products and manufacturing processes.

Leveraging Our Strong Customer Relationships. Our technical personnel work closely with ATE manufacturers to design tester interface and docking hardware that are compatible with their ATE. As a result, we are often privy to

proprietary technical data and information about these manufacturers' products. We believe that because we do not compete with ATE manufacturers in the prober, handler and tester markets, we have been able to establish strong collaborative relationships with these manufacturers that enable us to develop ancillary ATE products on an accelerated basis. Engineering is also at the heart of the Thermal segment where customers often return to inTEST with their next thermal challenge. We work to cement relationships with customers that have demanding specifications whether it be thermal testing at temperature extremes for aerospace application, for example, or delivering precise heating for efficient industrial processes. We believe that with our capabilities to consistently demonstrate solutions from proof of concept to manufactured products with required specifications, we can continue to strengthen our customer relationships.

Maintaining Our International Presence. Our existing and potential customers are concentrated in certain regions throughout the world. We believe that we must maintain a presence in the markets in which our customers operate. We currently have offices in the U.S., Germany, Singapore, the Netherlands and the U.K.

Controlling Costs. At the same time as we are pursuing growth opportunities, we will seek ways to more aggressively streamline our cost structure, so that we are positioned to offer products at prices that provide the margin for a reasonable profit as well as the resources for continual product development.

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OUR SEGMENTS

We have two product segments, Thermal and Electromechanical Semiconductor ("EMS"), which are also our reporting units. Our Thermal segment consists of (i) inTEST Thermal Solutions ("iTS") which manufactures and sells products under the Temptronic, Sigma and Thermonics brand names, and (ii) Ambrell. iTS has operations in Massachusetts, Germany and Singapore. Ambrell has operations in New York, the Netherlands and the U.K. Customers use the thermal solutions produced by iTS for product development, characterization and production test applications. Ambrell provides customers with induction heating system solutions for conditioning, joining, and forming conductive materials in the manufacturing process. Our Thermal segment provides these solutions across an array of industries including automotive, consumer electronics, defense/aerospace, energy, industrial, semiconductor and telecommunications markets.

Our EMS segment consists of our manufacturing operations in New Jersey and California. Semiconductor manufacturers use our EMS solutions in back-end testing where our mechanical and electrical products serve production testing of wafers and specialized packaged ICs. These ICs include microprocessors, digital signal processing chips, mixed signal devices, MEMS (Micro-Electro-Mechanical Systems), application specific ICs and specialized memory ICs, and are used primarily in the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. We custom design most of our products for each customer's particular combination of ATE.

Thermal Products

ThermoStream(R) Products: Our ThermoStream(R) products are used in the semiconductor market as a stand-alone temperature management tool, or in a variety of electronic test applications as part of our MobileTemp systems. ThermoStream(R) products provide a source of heated and cooled air which can be directed over the component or device under test. These systems are capable of controlling temperatures to within +/- 0.1 degree Celsius over a range of -100 degrees Celsius to as high as +300 degrees Celsius within 1.0 degree Celsius of accuracy. As a stand-alone tool, ThermoStreams(R) provide a temperature-controlled air stream to rapidly change and stabilize the temperature of packaged ICs and other devices.

Our MobileTemp Series combines our ThermoStream(R) products with our family of exclusive, high-speed ThermoChambers to offer thermal test systems with fast, uniform temperature control in a compact package enabling temperature testing at the test location. MobileTemp Systems are designed specifically for small thermal-mass applications beyond the semiconductor market and have found application in the automotive, electronic, fiber optic and oil field service markets testing such things as electronic sub-assemblies, sensor assemblies, and printed circuit boards.

Traditionally, our customers used ThermoStream(R) products primarily in engineering, quality assurance and small-run manufacturing environments. However, increasingly, our customers use ThermoStream(R) products in longer-run production applications. ThermoStream(R) and MobileTemp products range in price from approximately $15,000 to $50,000.

ThermoChambers: Our chamber products are available in a variety of sizes, from small bench-top units to chambers with internal volumes of twenty-seven cubic feet and greater and with temperature ranges as wide as from -190 degrees Celsius to +500 degrees Celsius. Chambers can be designed to utilize liquid nitrogen or liquid carbon dioxide cooling or mechanical refrigeration, and sometimes both. These chambers can accommodate large thermal masses and are found in both laboratory and production environments. Chambers are priced from $15,000 to $150,000.

Thermal Platforms: Our platforms are available in surface sizes ranging from 7.2 square inches to 616 square inches. They provide a flat, thermally conductive, precisely temperature controllable surface that is ideal for conditioning of testing devices with a flat surface. Platforms are available with temperature ranges as broad as -100 degrees Celsius to +250 degrees Celsius. Thermal platforms can be designed to utilize either liquid nitrogen or liquid carbon dioxide cooling or mechanical refrigeration. Platforms offer virtually unimpeded access to the device under test and their easy access and compact size makes them ideal for convenient bench-top use. Platforms are priced from $6,500 to $65,000.

Thermonics(R) Products: Our Thermonics temperature conditioning products provide tempered gas or fluid to enable customers to maintain desired thermal conditions within their tool or process. Applications include general industrial, chemical processing, energy, electronics, automotive, defense/aerospace and semiconductor markets. Prices range from $20,000 to greater than $200,000.

EKOHEAT(R) Products: Our EKOHEAT(R) induction heating systems with power ratings from 10KW to 500KW are manufactured by Ambrell and are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. Prices range from $25,000 to $250,000.

EASYHEAT™ Products: Our compact EASYHEAT™ induction heating systems with power ratings from 1KW to 10KW are manufactured by Ambrell are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. Prices range from $5,000 to $25,000.

Applications for both EKOHEAT(R) and EASYHEAT™ products include annealing, bonding, brazing, curing, forging, heat treating, melting, shrink-fitting, soldering and testing.

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EMS Products

Manipulator Products. We offer two lines of manipulator products: the in2(R) and the Cobal Series. These free-standing universal manipulators can hold a variety of test heads and enable an operator to reposition a test head for alternate use with any one of several probers or handlers on a test floor.

The in2(R) and Cobal Series of manipulator products incorporate our balanced floating-head design. This design permits a test head weighing up to 1,100 pounds to be held in an effectively weightless state, so it can be moved manually or with optional powered assistance, up or down, right or left, forward or backward and rotated around each axis (known as six degrees of motion freedom) by an operator using a modest amount of force. The same design features enable the operator to dock the test head without causing inadvertent damage to the fragile electrical contacts. As a result, after testing a particular production lot of ICs, the operator can quickly and easily disconnect a test head that is held in an in2(R) manipulator and equipped with our docking hardware and dock it to another electronic device handler for testing either a subsequent lot of the same packaged ICs or to test different ICs. The in2(R) and Cobal Series manipulators range in price from approximately $12,000 to $60,000.

Docking Hardware Products. We offer two lines of docking hardware products: fixed manual docking and Intellidock pin and cup docking. Both types protect the delicate interface contacts and ensure proper repeatable and precise alignment between the test head's interface board and the prober's probing assembly or the handler's test socket as they are brought together, or "docked." Fixed manual docking includes a mechanical cam mechanism to dock and lock the test head to the prober or handler. Intellidock is an automated docking solution that provides operator feedback for each docking step via a touchscreen display. Both types eliminate motion of the test head relative to the prober or handler. This minimizes deterioration of the interface boards, test sockets and probing assemblies which is caused by constant vibration during testing. Our docking hardware products are used primarily with floating-head universal manipulators when maximum mobility and inter-changeability of handlers and probers between test heads is required. By using our docking hardware products, semiconductor manufacturers can achieve cost savings through improved ATE utilization, improved accuracy and integrity of test results, and reduced repairs and replacements of expensive ATE interface products.

We believe our docking hardware products offer our customers the ability to make various competing brands of test heads compatible with various brands of probers and handlers by only changing interface boards. This is called "plug-compatibility." Plug-compatibility enables increased flexibility and utilization of test heads, probers and handlers purchased from various ATE manufacturers. We believe that because we do not compete with ATE manufacturers in the sale of probers, handlers or testers, ATE manufacturers are willing to provide us with the information that is integral to the design of plug-compatible products. Our docking hardware products range in price from approximately $2,000 to $25,000.

Interface Products. Our tester interface products provide the electrical connections between the tester and the wafer prober or IC handler to carry the electrical signals between the tester and the probe card on the prober or the test socket on the handler. Our designs optimize the integrity of the transmitted signal. Therefore, our tester interfaces can be used with high speed, high frequency, digital or mixed signal testers used in testing more complex ICs. Because our tester interface products enable the tester to provide more reliable yield data, our interfaces may also reduce IC production costs. We design standard and modular interface products to address most possible tester/prober combinations on the market today. In addition, we provide a custom design service that will allow any of our customers to use virtually any tester, prober or handler combination with any type of device, such as analog, digital, mixed signal and radio frequency. For example, our Centaur(R) modular interface is designed to provide flexibility and scalability through the use of replaceable signal modules which can be easily changed on the test floor as our customers' testing requirements change. In addition to the Centaur(R) modular interface, we also offer over 200 different types of tester interface models that we custom designed for our customers' specific applications. These tester

interface products range in price from approximately $7,000 to $110,000.

Financial Information About Product Segments and Geographic Areas

Please see Note 17 of our consolidated financial statements included in Item 8 of this Report on Form 10-K for additional data regarding net revenues, profit or loss and total assets of each of our segments and revenues attributable to foreign countries.

MARKETING, SALES AND CUSTOMER SUPPORT

We market and sell our products primarily in markets where semiconductors are manufactured. North American and European semiconductor manufacturers, as well as third-party foundries, test and assembly providers, have located most of their back-end factories in Southeast Asia. The front-end wafer fabrication plants of U.S. semiconductor manufacturers are primarily in the U.S. Likewise, European, Taiwanese, South Korean and Japanese semiconductor manufacturers generally have located their wafer fabrication plants in their respective countries. We have been providing a greater number of engineered solutions to non-semiconductor markets. These are thermal-based solutions that fall into the categories of test and process, involving automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets.

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Thermal Products: We market our thermal products brands, Temptronic, Sigma and Thermonics, under the umbrella name of inTEST Thermal Solutions and sales to ATE manufacturers are handled directly by our own sales force. Sales to semiconductor manufacturers and customers in other markets in the U.S. are handled through independent sales representative organizations. In Singapore and Malaysia, our sales and service are handled through our internal sales and service staff. In the rest of Asia, our sales are handled through distributors. In Europe, sales managers at our office in Germany, as well as regional distributors and independent sales representatives, sell to semiconductor manufacturers and customers in other markets. We visit our distributors regularly and have trained them to sell and service our thermal products.

We market our EASYHEAT™ and EKOHEAT® precision induction heating equipment to manufacturers who require specialized industrial heating in a wide array of industries including automotive, aerospace and semiconductor and are sold globally through a combination of regional sales and strategic account managers and independent distributors. In North America and Europe, direct regional sales managers provide sales coverage augmented by distributors in Mexico and several European countries. Our strategic account managers cover targeted segments and create and manage relationships with key management personnel. In Asia, distributors have responsibility for sales and service of our products.

We also provide induction heating product support through our SmartCARE Service offering, which includes equipment repairs and training, preventative maintenance, enhanced warranties and spare parts. Our field service engineers, located in the U.S. and Europe, provide service and support globally. Additionally, a number of distributors in North America, Europe and Asia have factory-trained service technicians.

EMS Products: In North America, we sell to semiconductor manufacturers principally through the use of independent, commissioned sales representatives. North American sales representatives also coordinate product installation and support with our technical staff and participate in trade shows.

Our internal sales account managers handle sales to ATE manufacturers and are responsible for a portfolio of customer accounts and for managing certain independent sales representatives. In addition, our sales account managers are responsible for pricing, quotations, proposals and transaction negotiations, and they assist with applications engineering and custom product design. Technical support is provided to North American customers and independent sales representatives by employees based in New Jersey, California and Texas.

In Europe, we sell to semiconductor and ATE manufacturers through our internal sales staff. Technical support is provided by our staff in the U.K. In China, Japan, the Philippines, South Korea, and Thailand, we sell through the use of independent sales representatives who are supervised by our internal sales staff. In Malaysia, Singapore and Taiwan, our sales are handled by our internal sales staff. International sales representatives are responsible for sales, installation, support and trade show participation in their geographic market areas. Technical support is provided to Asian customers primarily by employees based in Malaysia, the Philippines and Taiwan.

CUSTOMERS

We market all of our products to end users, which include semiconductor manufacturers and third-party foundries, test and assembly providers, as well as to original equipment manufacturers ("OEMs"), which include ATE manufacturers and their third-party outsource manufacturing partners. In the case of thermal products, we also market our products to independent testers of semiconductors, manufacturers of automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications products, semiconductor research facilities, and manufacturers and manufacturing process integrators for a variety of industrial process applications. Our customers use our products

principally in production testing or process/manufacturing applications, although our ThermoStream(R) products traditionally have been used largely in engineering development and quality assurance. We believe that we sell to most of the major semiconductor manufacturers in the world.

During the years ended December 31, 2018 and 2017, Texas Instruments Incorporated accounted for 11% of our consolidated net revenues. While both of our operating segments sold products to this customer, these revenues were primarily generated by our EMS segment. During the year ended December 31, 2017, Hakuto Co. Ltd., one of our distributors, accounted for 11% of our consolidated net revenues. These revenues were generated by our Thermal segment. Our ten largest customers accounted for approximately 40% and 46% of our consolidated net revenues in 2018 and 2017, respectively. The loss of any one or more of our largest customers, or a reduction in orders by a major customer, could materially reduce our net revenues or otherwise materially affect our business, financial condition or results of operations.

Our largest customers in 2018 include:

Semiconductor Manufacturers	**Other**
Aixtron SE	Foxconn Optical Interconnect Technologies, Inc.
Analog Devices, Inc.	GT Advanced Technologies Incorporated
NXP Semiconductors N.V.	Hakuto Co. Ltd.
Texas Instruments Incorporated	LPE S.p.A
	Raytheon Company
	Rosendahl Nextrom GmbH

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MANUFACTURING AND SUPPLY

As of December 31, 2018, our principal manufacturing operations consisted of assembly and testing at our facilities in California, Massachusetts, New Jersey and New York. We assemble most of our products from a combination of standard components and custom parts that have been fabricated to our specifications by either third-party manufacturers or our own fabrication operation in New Jersey. Our practice is to use the highest quality raw materials and components in our products. The primary raw materials used in fabricated parts are all widely available. We purchase substantially all of our components from multiple suppliers. We purchase certain raw materials and components from single suppliers, however, we believe that all materials and components are available in adequate amounts from other sources, although from time to time, certain components may be in short supply because of high demand or the inability of some vendors to consistently meet our quality or delivery requirements.

We conduct inspections of incoming raw materials, fabricated parts and components using sophisticated measurement equipment. This includes testing with coordinate measuring machines in all but one of our manufacturing facilities to ensure that products with critical dimensions meet our specifications. We have designed our inspection standards to comply with applicable MIL specifications and ANSI standards.

Our Massachusetts facility is ISO 9001:2015 certified. Our New York facility is ISO 9001:2015 certified. Our New Jersey and California facilities manufacture products only for the semiconductor industry where ISO certification is not required. However, these locations do employ the practices embodied in the ISO 9001:2008.

ENGINEERING AND PRODUCT DEVELOPMENT

Our success depends on our ability to provide our customers with products and solutions that are well engineered, and to design those products and solutions before, or at least no later than, our competitors. As of December 31, 2018, we employed a total of 41 engineers, who were engaged in engineering and product development. In addition, when the demands of engineering and product development projects exceed the capacity or knowledge of our in-house staff, we retain temporary third-party engineering and product development consultants to assist us. Our practice in many cases is to assign engineers to work with specific customers, thereby enabling us to develop the relationships and exchange of information that is most conducive to successful product development and enhancement. In addition, some of our engineers are assigned to new product research and development and have worked on such projects as the development of new types of universal manipulators, the redesign and development of new thermal products and the development of high performance interfaces.

Since most of our products are customized, we consider substantially all of our engineering activities to be engineering and product development. We spent approximately $4.9 million in 2018 and $4.3 million in 2017 on engineering and product development. Our expenses in 2018 and 2017 include $1.2 million and $650,000, respectively, attributable to Ambrell, which we acquired in May 2017.

PATENTS AND OTHER PROPRIETARY RIGHTS

Our policy is to protect our technology by filing patent applications for the technologies that we consider important to our business. We also rely on trademarks, trade secrets, copyrights and unpatented know-how to protect our proprietary rights. It is our practice to require that all of our employees and third-party product development

consultants assign to us all rights to inventions or other discoveries relating to our business that were made while working for us. In addition, all employees and third-party product development consultants agree not to disclose any private or confidential information relating to our technology, trade secrets or intellectual property.

As of December 31, 2018, we held 71 active U.S. patents and had 6 pending U.S. patent applications covering various aspects of our technology. Our U.S. patents expire at various times beginning in 2019 and extending through 2036. During 2018, 2 U.S. patents were issued and we had 10 U.S. patents expire. We do not believe that the upcoming expiration of certain of our patents in 2019 will have a material impact on our business. We also hold foreign patents and file foreign patent applications, in selected cases corresponding to our U.S. patents and patent applications, to the extent management deems appropriate.

While we believe that our patents and other proprietary rights are important to our business, we also believe that, due to the rapid pace of technological change in the markets we serve, the successful manufacture and sale of our products also depends upon our engineering, manufacturing, marketing and servicing skills. In the absence of patent protection, we would be vulnerable to competitors who attempt to copy or imitate our products or processes. We believe our intellectual property has value, and we have taken in the past, and will take in the future, actions we deem appropriate to protect such property from misappropriation. There can be no assurance, however, that such actions will provide meaningful protection from competition. For additional information regarding risks related to our intellectual property, see the "Risk Factors" section of this Report.

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COMPETITION

We operate in an increasingly competitive environment within both of our product segments. Some of our competitors have greater financial resources and more extensive design and production capabilities than we do. Certain markets in which we operate have become more fragmented, with smaller companies entering the market. These new smaller entrants typically have much lower levels of fixed operating overhead than we do, which enables them to be profitable with lower priced products. In order to remain competitive with these and other companies, we must be able to continue to commit a significant portion of our personnel, financial resources, research and development and customer support to developing new products and maintaining customer relationships worldwide.

Our competitors include independent manufacturers, ATE manufacturers and, to a lesser extent, semiconductor manufacturers' in-house ATE interface groups. Competitive factors in the markets we serve include price, functionality, timely product delivery, customer service, applications support, product performance and reliability. We believe that our long-term relationships with our customers in the various markets we support, and our commitment to, and reputation for, providing high quality products, are important elements in our ability to compete effectively in all of our markets.

Our principal competitors for Thermostream(R) products are FTS Systems, a part of SP Industries, and MPI Corporation. Our principal competitors for environmental chambers are Cincinnati Sub-Zero Products, Inc., Espec Corp. and Thermotron Industries. Our principal competitor for thermal platforms is Environmental Stress Systems Inc. Our principal competitors for EKOHEAT(R) and EASYHEAT™ products are Inductotherm Corporation, Ajax-Tocco Magneticthermic, EFD Induction Corporation, Trumpf Huettinger GmbH, and Ceia Loge.

Our principal competitors for manipulator products are Advantest Corporation, Esmo AG, Reid-Ashman Manufacturing and Teradyne, Inc. Our principal competitors for docking hardware products include Advantest Corporation, Esmo AG, Knight Automation, Reid-Ashman Manufacturing and Teradyne, Inc. Our principal competitors for tester interface products are Advantest Corporation, Esmo AG, Reid-Ashman Manufacturing and Teradyne, Inc.

BACKLOG

At December 31, 2018, our backlog of unfilled orders for all products was approximately $13.4 million compared with approximately $13.7 million at December 31, 2017. At December 31, 2018 and 2017, our backlog included $5.3 million and $5.5 million, respectively, attributable to Ambrell. Our backlog includes customer orders which we have accepted, substantially all of which we expect to deliver in 2019. While backlog is calculated on the basis of firm purchase orders, a customer may cancel an order or accelerate or postpone currently scheduled delivery dates. Our backlog may be affected by the tendency of customers to rely on shorter lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog. As a result of these factors, our backlog at a particular date is not necessarily indicative of sales for any future period.

EMPLOYEES

At December 31, 2018, we had 209 full time employees, including 109 in manufacturing operations, 64 in customer support/operations and 36 in administration. Substantially all of our key employees are highly skilled and trained

technical personnel. None of our employees are represented by a labor union, and we have never experienced a work stoppage. From time to time we retain third-party contractors to assist us in manufacturing operations and engineering and product development projects.

ADDITIONAL INFORMATION

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and amendments to these reports that are filed with the SEC pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), are available free of charge through our website (www.intest.com) as soon as reasonably practicable after we electronically file them with, or furnish them to, the SEC. We also routinely post press releases, presentations, webcasts and other information regarding the Company on our website. The information posted to our website is not part of this Report.

Item 1A. RISK FACTORS

The following are some of the factors that could materially and adversely affect our future performance or could cause actual results to differ materially from those expressed or implied in our forward-looking statements. The risks and uncertainties described below are not the only ones facing us and we cannot predict every event and circumstance that may adversely affect our business. However, these risks and uncertainties are the most significant factors that we have identified at this time. If one or more of these risks actually occurs, our business, results of operations and/or financial condition could suffer, and the price of our stock could be negatively affected.

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We seek to acquire additional businesses. If we are unable to do so, our future rate of growth may be reduced or limited. We may incur significant expenses related to due diligence or other transaction-related expenses for a proposed acquisition that may not be completed.

A key element of our growth strategy is to acquire businesses, technologies or products that are complementary to our current product offerings. We seek to make acquisitions that will further expand our product lines as well as reduce our overall reliance on the ATE market. We may not be able to execute our acquisition strategy if:

- we are unable to identify suitable businesses, technologies or products to acquire;
- we do not have sufficient cash or access to required capital at the necessary time;
- we are unwilling or unable to outbid larger, more resourceful companies; or
- we are unable to successfully close proposed acquisitions.

Our acquisition strategy involves financial and management risks which may adversely affect our results in the future.

If we acquire additional businesses, technologies or products, we will face the following additional risks:

- future acquisitions could divert management's attention from daily operations or otherwise require additional management, operational and financial resources;
- we might not be able to integrate future acquisitions into our business successfully or operate acquired businesses profitably;
- we may realize substantial acquisition related expenses which would reduce our net earnings in future years; and
- our investigation of potential acquisition candidates may not reveal problems and liabilities of the companies that we acquire.

If any of the events described above occur, our earnings could be reduced. If we issue shares of our stock or other rights to purchase our stock in connection with any future acquisitions, we would dilute our existing stockholders' interests and our earnings per share may decrease. If we issue or incur debt in connection with any future acquisitions, lenders may require that we pledge our assets to secure repayment of such debt and impose covenants on us which could, among other things, restrict our ability to increase capital expenditures or to acquire additional businesses.

We may attempt to acquire a substantial business that would require us to issue or incur significant debt from third-parties. If we are unable to secure sufficient financing at terms that are acceptable to us, we may not be able to close the proposed acquisition. Additionally, should we incur significant debt, we may not be able to achieve compliance with all covenants related to the debt depending on our financial results in future periods.

In connection with our acquisition strategy, we are pursuing potential acquisition opportunities that may be significant in size compared to us, which could require us to obtain significant third-party financing to close the proposed transaction. We may encounter difficulties in securing necessary financing at terms that would be acceptable to us and may not be able to close on the proposed acquisition. In addition, should we incur significant third-party debt, our

future financial results may be negatively impacted by external factors, such as an economic recession, which may impact our ability to achieve compliance with any covenants related to the debt as well as make the required payments under the terms of the indebtedness.

We may acquire businesses in the future and utilize an earnout structure as we have done on prior transactions we have closed. In connection with the earnout, we may be required to accrue significant increases or decreases to the contingent consideration liability we would establish. These adjustments to the contingent consideration liability could cause our results of operations to have increased variability, which may negatively impact our stock's trading price.

We may utilize an earnout structure on future acquisitions. We are required to estimate the fair value of the contingent consideration associated with any earnout on a quarterly basis and record an adjustment to the contingent consideration liability in our results of operations for the period concerned. The contingent consideration adjustment we record quarterly may cause increased variability in our future results of operations, which may cause fluctuations in our stock price.

Our business is subject to intense competition, which has in the past and could in the future, materially adversely affect our business, financial condition and results of operations.

We face significant competition throughout the world in each of our product segments. Some of our competitors have substantial financial resources and more extensive design and production capabilities than we do. Some of our competitors are much smaller than we are, and therefore have much lower levels of overhead than we do, which enables them to sell their competing products at lower prices. In order to remain competitive, we must be able to continually commit a significant portion of our personnel and financial resources to developing new products and maintaining customer satisfaction worldwide. We expect our competitors to continue to improve the performance of their current products and introduce new products or technologies. Over the last several years, in response to significant declines in global demand for our products, some competitors have reduced their product pricing significantly, which has led to intensified price based competition, which has and could continue to materially adversely affect our business, financial condition and results of operations.

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Our sales are affected by the cyclicality and seasonality of the semiconductor and ATE markets, which causes our operating results to fluctuate significantly.

Our business depends in significant part upon the capital expenditures of semiconductor manufacturers. Capital expenditures by these companies depend upon, among other things, the current and anticipated market demand for semiconductors and the products that utilize them. Typically, semiconductor manufacturers curtail capital expenditures during periods of economic downturn. Conversely, semiconductor manufacturers increase capital expenditures when market demand requires the addition of new or expanded production capabilities or the reconfiguration of existing fabrication facilities to accommodate new products. In addition to being cyclical, the ATE market has also developed a seasonal pattern in the last several years, with the second and third quarters being the periods of strong demand and the first and fourth quarters being periods of weakened demand. We believe this change has been driven by the strong demand for consumer products containing semiconductor content sold during the year-end holiday shopping season. These market changes and seasonal sales pattern have contributed in the past, and will likely continue to contribute in the future, to fluctuations in our operating results.

We seek to further diversify the markets for our thermal products in order to increase the proportion of our sales attributable to markets which are less subject to cyclicality than the semiconductor and ATE markets. If we are unable to do so, our future performance will remain substantially exposed to the fluctuations of the cyclicality of the semiconductor and ATE markets.

Since 2009, we have sold our thermal products in markets outside of the semiconductor market, including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. During 2018 and 2017, our sales to these non-semiconductor markets were $33.2 million (including $19.1 million of net revenues attributable to Ambrell) and $29.0 million (including $13.2 million of net revenues attributable to Ambrell), respectively, and represented 42% and 44% of our consolidated net revenues, respectively. Prior to our acquisition of Ambrell, we offered only highly specialized engineering solutions in these markets outside the semiconductor market, the demand for which is limited and which we expect may vary significantly from period to period. Our goal is to increase our sales into these and other non-semiconductor markets; however, in most cases, the expansion of our thermal product sales into these new markets has occurred in the last several years, and we may experience difficulty in expanding our sales efforts further into these markets. These difficulties could include hiring sales and marketing staff with sufficient experience selling into these new markets and our ability to continue to develop products which meet the needs of customers in these markets and which are not currently offered by our competitors. In addition, due to the highly specialized nature of certain of our product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets. If we are unable to expand our sales in non-semiconductor markets, our net revenues and results of operations will remain substantially dependent upon the cycles of the semiconductor and ATE markets.

Changes in the buying patterns of our customers have affected, and may continue to affect, demand for our products and our gross and net operating margins. Such changes in patterns are difficult to predict and may not be immediately apparent.

In addition to the cyclicality and seasonality of the semiconductor and ATE markets, demand for our products and our gross and net operating margins have also been affected by changes in the buying patterns of our customers. Some of the changes in customer buying patterns that have impacted us in the past, and may continue to do so in the future, have included customers placing heightened emphasis on shorter lead times (which places increased demands on our available engineering and production capacity and may result in increasing unit costs) and ordering in smaller quantities (which prevents us from acquiring component materials in larger volumes at lower unit costs.) We have also experienced customer supply chain management groups demanding lower prices and spreading purchases across multiple vendors. We believe some of the changes in customer buying patterns are the result of changes within the ATE market over the last several years, including, for example, changing product requirements and longer time periods between new product offerings by OEMs. Such shifts in market practices have had, and may continue to have, varying degrees of impact on our net revenues and our gross and net operating margins. Such shifts are difficult to predict and may not be immediately apparent, and the impact of these practices is difficult to quantify from period to period. There can be no assurance that we will be successful in implementing effective strategies to counter these shifts.

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We generate a large portion of our sales from a small number of customers. If we were to lose one or more of our large customers, operating results could suffer dramatically.

During the years ended December 31, 2018 and 2017, Texas Instruments Incorporated accounted for 11% of our consolidated net revenues. While both of our operating segments sold products to this customer, these revenues were primarily generated by our EMS segment. During the year ended December 31, 2017, Hakuto Co. Ltd., one of our distributors, accounted for 11% of our consolidated net revenues. These revenues were generated by our Thermal segment. Our ten largest customers accounted for approximately 40% and 46% of our consolidated net revenues in 2018 and 2017, respectively. The loss of any one or more of our largest customers, or a reduction in orders by a major customer, could materially reduce our net revenues or otherwise materially affect our business, financial condition or results of operations.

Our operating results often change significantly from quarter to quarter and may cause fluctuations in our stock price.

Historically, our operating results have fluctuated significantly from quarter to quarter. We believe that these fluctuations occur primarily due to the cycles of demand in the semiconductor manufacturing industry. In addition to these changing cycles of demand, other factors that have caused our quarterly operating results to fluctuate in the past, and that may cause fluctuations and losses in the future, include:

- changes in demand in the markets we serve outside the ATE market including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunication markets;
- the state of the U.S. and global economies;
- changes in the buying patterns of our customers;
- changes in our market share;
- costs related to due diligence and transaction-related expenses for a proposed acquisition that does not get completed;
- costs and timing of integration of our acquisitions and plant consolidations and relocations;
- the technological obsolescence of our inventories;
- quantities of our inventories greater than is reasonably likely to be utilized in future periods;
- fluctuations in the level of product warranty charges;
- competitive pricing pressures;
- excess manufacturing capacity;
- our ability to control operating costs;
- delays in shipments of our products;
- the mix of our products sold;
- the mix of customers and geographic regions where we sell our products;
- changes in the level of our fixed costs;
- costs associated with the development of our proprietary technology;
- our ability to obtain raw materials or fabricated parts when needed;
- increases in costs of component materials;
- cancellation or rescheduling of orders by our customers;
- changes in government regulations; and

political or economic instability.

Because the market price of our common stock has tended to vary based on, and in relation to, changes in our operating results, fluctuations in the market price of our stock are likely to continue as variations in our quarterly results continue.

A breach of our operational or security systems could negatively affect our business and results of operations.

We rely on various information technology networks and systems, some of which are managed by third parties, to process, transmit and store electronic information, including confidential data, and to carry out and support a variety of business activities, including manufacturing, research and development, supply chain management, sales and accounting. A failure in or a breach of our operational or security systems or infrastructure, or those of our suppliers and other service providers, including as a result of cyberattacks, could disrupt our business, result in the disclosure or misuse of proprietary or confidential information, damage our reputation, cause losses and significantly increase our costs. In addition, domestic and international regulatory agencies have implemented, and are continuing to implement, various reporting and remediation requirements that companies must comply with upon learning of a breach. While we have insurance that may protect us from incurring some of these costs, there is no assurance that such insurance coverage is adequate to cover all costs and damages incurred in connection with a cyberattack.

Our industry is subject to rapid technological change, and our business prospects would be negatively affected if we are unable to quickly and effectively respond to innovation in the semiconductor and ATE markets.

Semiconductor technology continues to become more complex as manufacturers incorporate ICs into an increasing variety of products. This trend, and the changes needed in automated testing systems to respond to developments in the semiconductor market, are likely to continue. We cannot be certain that we will be successful or timely in developing, manufacturing or selling products that will satisfy customer needs or that will attain market acceptance. Our failure to provide products that effectively and timely meet customer needs or gain market acceptance will negatively affect our business prospects.

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If our suppliers do not meet product or delivery requirements, we could have reduced revenues and earnings.

Certain components may be in short supply from time to time because of high demand or the inability of some vendors to consistently meet our quality or delivery requirements. A significant portion of our material purchases require some custom work and there are not always multiple suppliers capable of performing such custom work on a timely or cost effective basis. If any of our suppliers were to cancel commitments or fail to meet quality or delivery requirements needed to satisfy customer orders for our products, we could lose time-sensitive customer orders, have reduced revenues and earnings, and be subject to contractual penalties, any of which could have a material adverse effect on our business, results of operations and financial condition.

Our business may suffer if we are unable to attract and retain key employees.

The loss of key personnel could adversely affect our ability to manage our business effectively. Our future success will depend largely upon the continued services of our senior management and other key employees or the development of successors with commensurate skills and talents. In the past, during periods of weakened demand which has caused us to experience operating losses, we have implemented temporary salary and benefit reductions and eliminations that have remained in place until our operations returned to profitability. If global economic conditions were to deteriorate and we were to implement such salary and benefit reductions or eliminations again, or if we cannot continue to increase employee salaries and maintain employee benefits commensurate with competitive opportunities, we may not be able to retain our senior management and other key employees. Our business could suffer if we were to lose one of more of our senior officers or other key employees.

A substantial portion of our customers are located outside the U.S., which exposes us to foreign political and economic risks.

We have operated internationally for many years and expect to expand our international operations as necessary to continue expansion of our sales and service to our non-U.S. customers. Our foreign subsidiaries generated 16% and 17% of consolidated net revenues in 2018 and 2017, respectively. Net revenues from foreign customers totaled $53.0 million, or 68% of consolidated net revenues in 2018, and $46.6 million, or 70% of consolidated net revenues in 2017. We expect our net revenues from foreign customers will continue to represent a significant portion of total net revenues. In addition to the risks generally associated with sales and operations in the U.S., sales to customers outside the U.S. and operations in foreign countries are subject to additional risks, which may, in the future, affect our operations. These risks include:

- the implementation of trade tariffs by the U.S. and other countries that would impact our products;
- political and economic instability in foreign countries;

the imposition of financial and operational controls and regulatory restrictions by foreign governments;
the need to comply with a wide variety of U.S. and foreign import and export laws;
local business and cultural factors that differ from our normal standards and practices, including business practices that we are prohibited from engaging in by the Foreign Corrupt Practices Act and other anti-corruption laws and regulations;
trade restrictions;
changes in taxes;
longer payment cycles;
fluctuations in currency exchange rates; and
the greater difficulty of administering business abroad.

A significant portion of our cash position is maintained overseas and we may not be able to repatriate cash from overseas when necessary which could have an adverse effect on our financial condition.

While much of our cash is in the U.S., a significant portion is generated from and maintained by our foreign operations. As of December 31, 2018, $3.9 million, or 22%, of our cash and cash equivalents was held by our foreign subsidiaries. Our financial condition and results of operations could be adversely impacted if we are unable to maintain a sufficient level of cash flow in the U.S. to address our cash requirements and we are unable to efficiently and timely repatriate cash from overseas. Any payment of distributions, loans or advances to us by our foreign subsidiaries could be subject to restrictions on, or taxation of, dividends or repatriation of earnings under applicable local law, monetary transfer restrictions and foreign currency exchange regulations in the jurisdictions in which our subsidiaries operate. If we are unable to repatriate the earnings of our subsidiaries, it could have an adverse impact on our ability to redeploy earnings in other jurisdictions where they could be used more profitably.

We have experienced and may continue to experience significant variability in our effective tax rates and may have exposure to additional tax liabilities and costs.

We are subject to paying income taxes in the U.S. and various other countries in which we operate. Our effective tax rate is dependent on where our earnings are generated and the tax regulations and the interpretation and judgment of administrative tax or revenue entities in the U.S. and other countries. We are also subject to tax audits in the countries where we operate. Any material assessment resulting from an audit from an administrative tax or revenue entity could negatively affect our financial results.

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Claims of intellectual property infringement by or against us could seriously harm our businesses.

From time to time, we may be forced to respond to or prosecute intellectual property infringement claims to defend or protect our rights or a customer's rights. These claims, regardless of merit, may consume valuable management time, result in costly litigation or cause product shipment delays. Any of these factors could seriously harm our business and operating results. We may have to enter into royalty or licensing agreements with third parties who claim infringement. These royalty or licensing agreements, if available, may be costly to us. If we are unable to enter into royalty or licensing agreements with satisfactory terms, our business could suffer. In instances where we have had reason to believe that we may be infringing the patent rights of others, or that someone may be infringing our patent rights, we have asked our patent counsel to evaluate the validity of the patents in question, as well as the potentially infringing conduct. If we become involved in a dispute, neither the third parties nor the courts are bound by our counsel's conclusions.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

At December 31, 2018, we leased 8 facilities worldwide. The following chart provides information regarding each of our principal facilities that we leased at December 31, 2018:

Location	Lease Expiration	Approx. Square Footage	Principal Uses
Mansfield, MA	August 2021	52,700	Corporate headquarters and Thermal segment operations (principal facility for iTS)
Mt. Laurel, NJ	April 2021	54,897	Principal executive offices and EMS segment operations
Fremont, CA	October 2020	15,746	EMS segment operations
Rochester, NY	April 2028	79,150	Thermal segment operations (principal facility for Ambrell)

All of our facilities have space to accommodate our needs for the foreseeable future.

Item 3. LEGAL PROCEEDINGS

From time to time we may be a party to legal proceedings occurring in the ordinary course of business. We are not currently involved in any material legal proceedings.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market for Common Stock

Our common stock is traded on NYSE American LLC (“NYSE American”) under the symbol "INTT." On March 15, 2019, the closing price for our common stock as reported on the NYSE American was $7.50. As of March 15, 2019, we had 10,570,258 shares outstanding that were held by approximately 1,000 beneficial and record holders.

No dividends were paid on our common stock in the years ended December 31, 2018 or 2017. We do not currently plan to pay cash dividends in the foreseeable future. Our current policy is to use any future earnings for reinvestment in the operation and expansion of our business, including possible acquisitions of other businesses, technologies or products. Payment of any future dividends will be at the discretion of our Board of Directors.

Purchases of Equity Securities

On October 27, 2015, our Board of Directors authorized the repurchase, from time to time, of up to $5.0 million of our common stock on the open market, in compliance with Rule 10b-18 under the Exchange Act, or in privately negotiated transactions (the "2015 Repurchase Plan"). Repurchases may also be made under trading plans entered into with RW Baird & Co. (each a "10b5-1 Plan"), which permit shares to be repurchased when we might otherwise be precluded from doing so under insider trading laws. The 2015 Repurchase Plan does not obligate us to repurchase any particular amount of common stock and may be suspended or discontinued at any time without prior notice. The 2015 Repurchase Plan is funded using our operating cash flow or available cash. The timing, price and amount of any shares repurchased under the 2015 Repurchase Plan is determined by our management, based on our evaluation of market conditions and other factors. To date, all purchases have been made in accordance with 10b5-1 Plans which provided for purchases to be made so long as the price did not exceed a maximum price. Management is considering new parameters for future purchases and may enter into a new 10b5-1 Plan at some point under those new parameters. As of December 31, 2018, all of the Company’s 10b5-1 Plans entered into in connection with the 2015 Repurchase Plan had expired.

There were no shares of our common stock repurchased by us or on our behalf during 2018. During 2017, we repurchased 13,883 shares under the 2015 Repurchase Plan at a cost of $62,000. As of December 31, 2018, we had repurchased a total of 297,020 shares at a cost of $1.2 million under the 2015 Repurchase Plan. All of the repurchased shares were retired.

Item 6. SELECTED FINANCIAL DATA

The following table contains certain selected consolidated financial data of inTEST and is qualified by the more detailed Consolidated Financial Statements and Notes thereto included elsewhere in this Report and should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the other financial information included in this Annual Report on Form 10-K. On May 24, 2017, we completed the acquisition of Ambrell. This acquisition is discussed in further detail in Note 3 to our Consolidated Financial Statements, including a discussion of the adjustments to our liability for contingent consideration in 2018 and 2017 which are detailed below.

	Years Ended December 31,				
	2018	2017	2016	2015	2014
	(in thousands, except per share data)				
Condensed Consolidated Statement of Operations Data:					
Net revenues	$78,563	$66,801	$40,227	$38,889	$41,796
Gross margin	39,401	34,690	20,378	18,698	20,462
Adjustment to contingent consideration liability	6,901	6,976	-	-	-
Operating income	5,180	3,611	4,146	2,562	4,916
Net earnings	3,037	975	2,658	1,861	3,439
Net earnings per common share:					
Basic	$0.29	$0.09	$0.26	$0.18	$0.33
Diluted	$0.29	$0.09	$0.26	$0.18	$0.33
Weighted average common shares outstanding:					
Basic	10,348	10,285	10,314	10,473	10,432
Diluted	10,382	10,339	10,333	10,494	10,466

	As of December 31,				
	2018	2017	2016	2015	2014
	(in thousands)				
Condensed Consolidated Balance Sheet Data:					
Cash and cash equivalents	$17,861	$13,290	$28,611	$25,710	$23,126
Working capital	14,203	16,580	32,950	30,205	28,032
Total assets	67,187	62,493	42,844	39,984	38,738
Long-term obligations	2,889	8,786	-	-	-
Total stockholders' equity	42,880	39,288	37,788	35,925	34,368

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Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

This MD&A should be read in conjunction with the accompanying consolidated financial statements.

Our business and results of operations are substantially dependent upon the demand for ATE by semiconductor manufacturers and companies that specialize in the testing of ICs. Demand for ATE is driven by semiconductor manufacturers that are opening new, or expanding existing, semiconductor fabrication facilities or upgrading equipment, which in turn is dependent upon the current and anticipated market demand for semiconductors and products incorporating semiconductors. Such market demand can be the result of market expansion, development of new technologies or redesigned products to incorporate new features, or the replacement of aging equipment. In addition, we continue to focus on design improvements and new approaches for our own products which contribute to our net revenues as our customers adopt these new products. As further discussed below, on May 24, 2017, we acquired Ambrell, which has historically sold its products almost exclusively to customers in the industrial market, which is a non-semiconductor market. The acquisition of Ambrell has reduced our dependence on customers in the semiconductor market and increased our orders and net revenues from markets outside the semiconductor market. We expect that our future orders and net revenues will be approximately equally split between the semiconductor and non-semiconductor markets.

In the past, the semiconductor market has been highly cyclical with recurring periods of oversupply, which often have a severe impact on the semiconductor market's demand for ATE, including the products we manufacture. This cyclicality can cause wide fluctuations in both our orders and net revenues and, depending on our ability to react quickly to these shifts in demand, can significantly impact our results of operations. Semiconductor and ATE market cycles are difficult to predict and because the market cycles are generally characterized by sequential periods of growth or declines in orders and net revenues during each cycle, year over year comparisons of operating results may not always be as meaningful as comparisons of periods at similar points in either up or down cycles. In addition, during both downward and upward cycles in our market, in any given quarter, the trend in both our orders and net revenues can be erratic. This can occur, for example, when orders are canceled or currently scheduled delivery dates are accelerated or postponed by a significant customer or when customer forecasts and general business conditions fluctuate during a quarter.

In addition to being cyclical, the ATE market has also developed a seasonal pattern, with the second and third quarters being the periods of strong demand and the first and fourth quarters being periods of weakened demand. We believe this change has been driven by the strong demand for consumer products containing semiconductor content sold during the year-end holiday shopping season.

Third-party market share statistics are not available for the products we manufacture and sell into the ATE market; therefore, comparisons of period over period changes in our market share are not easily determined. As a result, it is difficult to ascertain if ATE market volatility in any period is the result of macro-economic or customer-specific factors impacting ATE market demand, or if we have gained or lost market share to a competitor during the period.

As part of our ongoing strategy to reduce the impact of semiconductor and ATE market volatility on our business operations, we continue to diversify our served markets to address the thermal test requirements of several other markets outside the semiconductor market. These include the automotive, consumer electronics, consumer product packaging, defense/aerospace, energy, fiber optics, industrial, telecommunications and other markets. We believe that these markets usually are less cyclical than the semiconductor and ATE markets. While market share statistics exist for some of the markets we serve outside the semiconductor market, due to the nature of our highly specialized product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets and, therefore, do not anticipate developing meaningful market shares in these non-semiconductor markets. In addition, our orders and net revenues in any given period in these markets do not necessarily reflect the overall trends in these non-semiconductor markets due to our limited market shares. Consequently, we are continuing to evaluate buying patterns and opportunities for growth in these non-semiconductor markets that may affect our performance. The level of our orders and net revenues from these non-semiconductor markets has varied in the past, and we expect will vary significantly in the future, as we work to build our presence in these markets and establish new markets for our products.

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While the majority of our orders and net revenues are derived from the ATE market, our operating results do not always follow the overall trend in the ATE market in any given period. We believe that these anomalies may be driven by a variety of factors within the ATE market, including, for example, changing product requirements, longer time periods between new product offerings by OEMs and changes in customer buying patterns. In addition, in recent periods we have seen instances where demand for ATE is not consistent for each of our product segments or for any given product within a particular product segment. This inconsistency in demand for ATE can be driven by a number of factors, but in most cases, we have found that the primary reason is unique customer-specific changes in demand for certain products driven by the needs of their customers or markets served. These shifts in market practices and customer-specific needs have had, and may continue to have, varying levels of impact on our operating results and are difficult to quantify or predict from period to period. Management has taken, and will continue to take, such actions it deems appropriate to adjust our strategies, products and operations to counter such shifts in market practices as they become evident.

Acquisition

As previously mentioned, on May 24, 2017, we completed the acquisition of Ambrell by acquiring all of its outstanding capital stock. Ambrell is a manufacturer of precision induction heating systems used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our current thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets. This acquisition has been accounted for as a business combination using purchase accounting. The purchase price for Ambrell was $22 million in cash paid at closing, subject to a customary post-closing working capital adjustment, and additional contingent consideration of up to $18 million in the form of earnouts paid based upon a multiple of adjusted EBITDA for 2017 and 2018. The first earnout paid after calendar year 2017 was completed was an amount equal to 8x Ambrell's adjusted EBITDA for 2017 minus the $22 million paid at closing; this amount was $5.8 million and was paid in April 2018. The second earnout, which we expect to pay in April 2019, will be an amount equal to 8x Ambrell's adjusted EBITDA for 2018 minus the sum of the $22 million paid at closing and $5.8 million earnout paid with respect to 2017. As of December 31, 2018, we had accrued $12.2 million in earnout payable based on Ambrell’s actual adjusted EBITDA for 2018. For further discussion of the acquisition, see Notes 3 and 4 to our consolidated financial statements.

Orders and Backlog

The following table sets forth, for the periods indicated, a breakdown of the orders received by product segment and market (in thousands).

	Years Ended December 31,		**Change**	
	2018	**2017**	**$**	**%**
Orders:				
Thermal	$55,110	$43,953	$11,157	25%
EMS	23,124	25,058	(1,934)	(8)%
	$78,234	$69,011	$9,223	13%

Semiconductor market	$45,954	$39,214	$6,740	17%
Non-semiconductor market	32,280	29,797	2,483	8 %
	$78,234	$69,011	$9,223	13%

Total consolidated orders for the year ended December 31, 2018 were $78.2 million compared to $69.0 million for the same period in 2017. During the year ended December 31, 2018, we recorded $26.3 million in orders attributable to Ambrell, of which $18.1 million were attributable to the industrial market, which is a non-semiconductor market. During the year ended December 31, 2017, we recorded $14.9 million in orders attributable to Ambrell, of which $13.8 million were attributable to the industrial market, which is a non-semiconductor market. When adjusted to eliminate the impact of orders attributable to Ambrell, our consolidated orders for the year ended December 31, 2018 would have been $51.9 million and would have decreased $2.2 million, or 4%, as compared to the same period in 2017. The decrease primarily reflects lower levels of demand experienced by our EMS segment from its customers within the ATE market.

When adjusted to eliminate the orders attributable to Ambrell, orders from customers in non-semiconductor markets for the year ended December 31, 2018 were $14.2 million, or 27% of total consolidated orders, compared to $16.0 million, or 30% of total consolidated orders for the same period in 2017. The reduction in demand was primarily from certain customers in the telecommunications market, which was partially offset by an increase from customers in the industrial market. The level of our orders in these non-semiconductor markets has varied in the past, and we expect it will vary significantly in the future as we build our presence in these markets and establish new markets for our products.

At December 31, 2018, our backlog of unfilled orders for all products was approximately $13.4 million compared with approximately $13.7 million at December 31, 2017. At December 31, 2018 and 2017, our backlog included $5.3 million and $5.5 million, respectively, attributable to Ambrell. Our backlog includes customer orders which we have accepted, substantially all of which we expect to deliver in 2019. While backlog is calculated on the basis of firm purchase orders, a customer may cancel an order or accelerate or postpone currently scheduled delivery dates. Our backlog may be affected by the tendency of customers to rely on short lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog. As a result, our backlog at a particular date is not necessarily indicative of sales for any future period.

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Net Revenues

The following table sets forth, for the periods indicated, a breakdown of the net revenues by product segment and market (in thousands).

	Years Ended December 31,		Change	
	2018	**2017**	**$**	**%**
Net revenues:				
Thermal	$55,994	$42,233	$13,761	33%
EMS	22,569	24,568	(1,999)	(8)%
	$78,563	$66,801	$11,762	18%
Semiconductor market	$45,378	$37,763	$7,615	20%
Non-semiconductor market	33,185	29,038	4,147	14%
	$78,563	$66,801	$11,762	18%

Total consolidated net revenues for the year ended December 31, 2018 were $78.6 million compared to $66.8 million for the same period in 2017. During the year ended December 31, 2018, we recorded $26.4 million in net revenues attributable to Ambrell, of which $19.1 million were attributable to the industrial market, which is a non-semiconductor market. During the year ended December 31, 2017, we recorded $13.6 million in net revenues attributable to Ambrell, of which $13.2 million were attributable to the industrial market, which is a non-semiconductor market. When adjusted to eliminate the impact of the net revenues attributable to Ambrell, our net revenues for the year ended December 31, 2018, would have been $52.1 million and would have decreased $1.1 million or 2% as compared to the same period in 2017. The decrease in net revenues primarily reflects the aforementioned reduction in demand experienced by our EMS segment from its customers in the ATE market.

When adjusted to eliminate the net revenues attributable to Ambrell, net revenues from customers in non-semiconductor markets for the year ended December 31, 2018 were $14.0 million, or 27% of total consolidated net revenues, compared to $15.8 million, or 30% of total consolidated net revenues for the same period in 2017. The decrease in net revenues was primarily from customers in the telecommunications markets which was partially offset by increases from customers in the defense/aerospace and industrial markets. The level of our net revenues in these non-semiconductor markets has varied in the past, and we expect it will vary significantly in the future as we build our presence in these markets and establish new markets for our products.

Product/Customer Mix

Both of our product segments each have multiple products that we design, manufacture and market to our customers. Due to a number of factors, our products have varying levels of gross margin. The mix of products we sell in any period is ultimately determined by our customers' needs. Therefore, the mix of products sold in any given period can change significantly from the prior period. As a result, our consolidated gross margin can be significantly impacted in any given period by a change in the mix of products sold in that period.

We sell most of our products to semiconductor manufacturers and third-party test and assembly houses (end user sales) and to ATE manufacturers (OEM sales) who ultimately resell our equipment with theirs to both semiconductor manufacturers and third-party test and assembly houses. Our Thermal segment also sells into a variety of other

markets, including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. As a result of the acquisition of Ambrell, we now also sell into the consumer products packaging, fiber optics and other markets within the broader industrial market. The mix of customers during any given period will affect our gross margin due to differing sales discounts and commissions. For the years ended December 31, 2018 and 2017, our OEM sales as a percentage of net revenues were 13% and 9%, respectively.

OEM sales generally have a lower gross margin than end user sales, as OEM sales historically have had a more significant discount. Our current net operating margins on most OEM sales, however, are only slightly less than margins on end user sales because of the payment of third party sales commissions on most end user sales. We have also continued to experience demands from our OEM customers' supply chain managers to reduce our sales prices to them. If we cannot further reduce our manufacturing and operating costs, these pricing pressures will negatively affect our gross and operating margins.

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Results of Operations

The results of operations for our two product segments are generally affected by the same factors described in the Overview section above. Separate discussions and analyses for each product segment would be repetitive. The discussion and analysis that follows, therefore, is presented on a consolidated basis and includes discussion of factors unique to each product segment where significant to an understanding of that segment.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net Revenues. Net revenues were $78.6 million for the year ended December 31, 2018 compared to $66.8 million for the same period in 2017, an increase of $11.8 million or 18%. For the years ended December 31, 2018 and 2017, our net revenues included $26.4 million and $13.6 million, respectively, of net revenues attributable to the aforementioned acquisition of Ambrell on May 24, 2017. When adjusted to eliminate the impact of the acquisition of Ambrell, our net revenues for the year ended December 31, 2018 would have decreased $1.1 million or 2% as compared to the same period in 2017. We believe this decrease reflects the factors previously discussed in the Overview.

Gross Margin. Gross margin was 50% for the year ended December 31, 2018 compared to 52% for the same period in 2017. Our fixed operating costs increased $2.4 million in 2018 as compared to 2017. When adjusted to eliminate the impact of the costs attributable to Ambrell in both 2018 and 2017, our fixed operating costs would have increased $457,000 for the year ended December 31, 2018 as compared to the same period in 2017. The $457,000 increase in our fixed operating costs primarily reflects higher salary and benefits expense for our Thermal segment as a result of increased production activity.

Selling Expense. Selling expense was $9.6 million for the year ended December 31, 2018 compared to $8.1 million for the same period in 2017, an increase of $1.5 million or 19%. When adjusted to eliminate the impact of the costs attributable to Ambrell in both 2018 and 2017, our selling expense would have decreased $226,000 for the year ended December 31, 2018 as compared to the same period in 2017. The $226,000 decrease primarily reflects lower levels of salary and benefits expense for our Thermal segment, a reduction in commission expense, reflecting changes in product mix as well as the lower net revenues of our EMS segment, and a decrease in travel costs for our Thermal segment. These decreases were partially offset by an increase in warranty expense for our Thermal segment.

Engineering and Product Development Expense. Engineering and product development expense was $4.9 million for the year ended December 31, 2018 compared to $4.3 million for the same period in 2017, an increase of $607,000, or 14%. When adjusted to eliminate the impact of the costs attributable to Ambrell in both 2018 and 2017, our engineering and product development expense would have increased $15,000 for the year ended December 31, 2018 as compared to the same period in 2017. Increases in spending on legal matters related to our intellectual property were partially offset by decreased spending on materials used in new product development, primarily for our Thermal segment, and lower salary and benefits expense for our EMS product segment.

General and Administrative Expense. General and administrative expense was $12.8 million for the year ended December 31, 2018 compared to $11.7 million for the same period in 2017, an increase of $1.1 million, or 10%. Our expense for 2017 included $935,000 of transaction costs related to the acquisition of Ambrell. When adjusted to eliminate the impact of the acquisition costs as well as the general and administrative costs attributable to Ambrell in both 2018 and 2017, our general and administrative expense would have increased $1.1 million for the year ended December 31, 2018 as compared to the same period in 2017. This increase reflects higher levels of salary and benefits

expense, as a result of increases in corporate headcount, along with increases in fees for third party professionals who assist us with a variety of compliance matters. These increases were partially offset by a reduction in bonuses for senior management.

Contingent Consideration Liability. During the years ended December 31, 2018 and 2017, we recorded increases of $6.9 million and $7.0 million, respectively, in the fair value of our liability for contingent consideration. This liability is a result of the aforementioned acquisition of Ambrell in May 2017 and is discussed further in Notes 3 and 4 to our consolidated financial statements. The increases reflect higher actual adjusted EBITDA for the years ended December 31, 2017 and 2018 as compared to the amounts projected as of the acquisition date.

Income Tax Expense. For the year ended December 31, 2018, we recorded income tax expense of $2.0 million compared to $2.9 million for the same period in 2017. Our effective tax rate was 40% for 2018 compared to 75% for 2017. On a quarterly basis, we record income tax expense or benefit based on the expected annualized effective tax rate for the various taxing jurisdictions in which we operate our businesses. Our effective tax rates for both 2018 and 2017 reflect the impact of the aforementioned adjustment to our liability for contingent consideration which is not deductible for tax purposes. In addition, our effective tax rates for 2018 and 2017 reflect the impact of tax legislation enacted in December 2017 which, among other things, reduced the corporate tax rate to 21% starting in 2018 and created a territorial tax system with a one-time mandatory transition tax on previously deferred earnings of foreign subsidiaries. In connection with this new tax legislation, we recorded a provisional amount during the fourth quarter of 2017 related to the transition tax. During the second quarter of 2018, as a result of the finalization of our analysis of the impact of the new tax legislation, we determined we did not owe this amount and reversed the $476,000 accrual that had been made in the fourth quarter of 2017.

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Liquidity and Capital Resources

As discussed more fully in the Overview, our business and results of operations are substantially dependent upon the demand for ATE by semiconductor manufacturers and companies that specialize in the testing of ICs. The cyclical and volatile nature of demand for ATE makes estimates of future revenues, results of operations and net cash flows difficult.

Our primary historical source of liquidity and capital resources has been cash flow generated by our operations and we manage our businesses to maximize operating cash flows as our primary source of liquidity. We use cash to fund growth in our operating assets, for new product research and development, for acquisitions and for stock repurchases.

Liquidity

Our cash and cash equivalents and working capital were as follows (in thousands):

	December 31,	
	2018	**2017**
Cash and cash equivalents	$17,861	$13,290
Working capital	$14,203	$16,580

As of December 31, 2018, $3.9 million of our cash and cash equivalents was held by our foreign subsidiaries. We currently expect our cash and cash equivalents and projected future cash flow to be sufficient to support our short term working capital requirements, the 2018 earnout payable payment for Ambrell and other corporate requirements. However, we may need additional financial resources, which could include debt or equity financings, to consummate a significant acquisition if the consideration in such a transaction would require us to utilize a substantial portion of, or an amount equal to or in excess of, our available cash. We do not currently have any credit facilities under which we can borrow to help fund our working capital or other requirements.

Cash Flows

Operating Activities. Net cash provided by operations for the year ended December 31, 2018 was $11.0 million. During 2018, we recorded net earnings of $3.0 million which included non-cash charges of $6.9 million for an increase in the fair value of our contingent consideration liability related to the acquisition of Ambrell, $1.9 million for depreciation and amortization, $653,000 for amortization of deferred compensation expense related to stock-based awards, and $285,000 as a provision for excess and obsolete inventory. Approximately $1.0 million of our amortization expense was related to the intangible assets acquired as part of the acquisition of Ambrell in May 2017, which is discussed further in the Overview and Note 3 to our consolidated financial statements. Accounts receivable decreased $1.4 million during 2018, reflecting decreased net revenue levels for our EMS segment during the second half of 2018, while inventory increased $1.8 million, primarily reflecting increased order activity for our Thermal segment during 2018.

Investing Activities. In April 2018, we paid $5.8 million which was the final amount due for the 2017 earnout related to the acquisition of Ambrell, as discussed further in the Overview and Note 3 to our consolidated financial statements. Of this amount, $4.1 million had been accrued at the time of the acquisition as a part of the purchase price for Ambrell, and, accordingly, is included in investing activities on our consolidated statement of cash flows for the year ended December 31, 2018. The balance of the payment is included in operating activities. During 2018, purchases of property and equipment were $2.2 million, primarily reflecting the leasehold improvements for our new facility in Rochester New York, which was occupied by Ambrell in the second quarter of 2018. We have no other significant commitments for capital expenditures for 2019; however, depending upon changes in market demand or manufacturing and sales strategies, we may make such purchases or investments as we deem necessary and appropriate.

New or Recently Adopted Accounting Standards

See Note 2 to the consolidated financial statements for information concerning the implementation and impact of new or recently adopted accounting standards.

Critical Accounting Policies and Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to inventories, long-lived assets, goodwill, identifiable intangibles, contingent consideration liabilities and deferred income tax valuation allowances. We base our estimates on historical experience and on appropriate and customary assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Some of these accounting estimates and assumptions are particularly sensitive because of their significance to our consolidated financial statements and because of the possibility that future events affecting them may differ markedly from what had been assumed when the financial statements were prepared.

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Inventory Valuation

Inventories are valued at cost on a first-in, first-out basis, not in excess of market value. On a quarterly basis, we review our inventories and record excess and obsolete inventory charges based upon our established objective excess and obsolete inventory criteria. These criteria identify material that has not been used in a work order during the prior twelve months and the quantity of material on hand that is greater than the average annual usage of that material over the prior three years. In certain cases, additional excess and obsolete inventory charges are recorded based upon current market conditions, anticipated product life cycles, new product introductions and expected future use of the inventory. The excess and obsolete inventory charges we record establish a new cost basis for the related inventories. During 2018 and 2017, we recorded inventory obsolescence charges for excess and obsolete inventory of $285,000 and $251,000, respectively.

Goodwill, Intangible and Long-Lived Assets

We account for goodwill and intangible assets in accordance with Accounting Standards Codification ("ASC") 350 (Intangibles- Goodwill and Other). Finite-lived intangible assets are amortized over their estimated useful economic life and are carried at cost less accumulated amortization. Goodwill is assessed for impairment at least annually in the fourth quarter, on a reporting unit basis, or more frequently when events and circumstances occur indicating that the recorded goodwill may be impaired. As a part of the goodwill impairment assessment, we have the option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount. If, as a result of our qualitative assessment, we determine this is the case, we are required to perform a goodwill impairment test to identify potential goodwill impairment and measure the amount of goodwill impairment loss to be recognized. The test is discussed below. If, as a result of our qualitative assessment, we determine that it is more-likely-than-not that the fair value of the reporting unit is greater than its carrying amounts, the goodwill impairment test is not required.

The quantitative goodwill impairment test, used to identify both the existence of impairment and the amount of impairment loss, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. The goodwill impairment assessment is based upon a combination of the income approach, which estimates the fair value of our reporting units based upon a discounted cash flow approach, and the market approach which estimates the fair value of our reporting units based upon comparable market multiples. This fair value is then reconciled to our market capitalization at year end with an appropriate control premium. The determination of the fair value of our reporting units requires management to make significant estimates and assumptions including the selection of appropriate peer group companies, control premiums, discount rate, terminal growth rates, forecasts of revenue and expense growth rates, income tax rates, changes in working capital, depreciation, amortization and capital expenditures. Changes in assumptions concerning future financial results or other underlying assumptions could have a significant impact on either the fair value of the reporting unit or the amount of the goodwill impairment charge. At each of December 31, 2018 and 2017, goodwill was $13.7 million. We did not record any impairment charges related to our goodwill during 2018 or 2017.

Indefinite-lived intangible assets are assessed for impairment at least annually in the fourth quarter, or more frequently if events or changes in circumstances indicate that the asset might be impaired. As a part of the impairment assessment, we have the option to perform a qualitative assessment to determine whether it is more likely than not that

an indefinite-lived intangible asset is impaired. If, as a result of our qualitative assessment, we determine that it is more-likely-than-not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, the quantitative impairment test is required; otherwise, no further testing is required. The quantitative impairment test consists of a comparison of the fair value of the intangible asset with its carrying amount. If the carrying amount of the intangible asset exceeds its fair value, an impairment loss is recognized in an amount equal to that excess. At each of December 31, 2018 and 2017, our indefinite-lived intangible assets were trademarks carried at $6.7 million. We did not record any impairment charges related to our indefinite-lived intangible assets during 2018 or 2017.

Long-lived assets, which consist of finite-lived intangible assets and property and equipment, are assessed for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable or that the useful lives of these assets are no longer appropriate. Each impairment test is based on a comparison of the estimated undiscounted cash flows to the recorded value of the asset. If impairment is indicated, the asset is written down to its estimated fair value. The cash flow estimates used to determine the impairment, if any, contain management's best estimates using appropriate assumptions and projections at that time. At December 31, 2018 and 2017, finite-lived intangibles and long-lived assets were $10.9 million and $10.8 million, respectively. We did not record any impairment charges related to our long-lived assets during 2018 or 2017.

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Contingent Consideration Liability

The contingent consideration liability on our balance sheet is accounted for in accordance with the guidance in ASC 820 (Fair Value Measurement). ASC 820 establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and our own assumptions (unobservable inputs). Our contingent consideration liability is measured at fair value on a recurring basis using Level 3 inputs which are inputs that are unobservable and significant to the overall fair value measurement. These unobservable inputs reflect our assumptions about the inputs that market participants would use in pricing the asset or liability, and are developed based on the best information available in the circumstances.

Our contingent consideration liability is a result of our acquisition of Ambrell on May 24, 2017, and it represents the estimated fair value of the additional cash consideration payable that is contingent upon the achievement of certain financial results by Ambrell in 2018, as discussed more fully in Note 3. The fair value of this Level 3 instrument involves generating various scenarios for projected adjusted EBITDA over a specified time period, calculating the associated contingent consideration payments and discounting the average payments to present value. During the second half of 2017, we recorded a $7.0 million increase in the fair value of our contingent consideration liability. This increase primarily reflected higher actual adjusted EBITDA for the year ended December 31, 2017 as a result of significantly higher than expected levels of net revenues and EBITDA in the fourth quarter of 2017, and an increase in the projected adjusted EBITDA for the year ended December 31, 2018, also as a result of forecasts for net revenues in 2018 which exceed the amounts projected as of the acquisition date. As of December 31, 2017, the contingent consideration liability on our balance sheet for the 2018 earnout was $5.7 million. During 2018, we recorded an additional $6.9 million increase in the fair value of the contingent consideration liability. As of December 31, 2018, we transferred the contingent consideration liability to earnout payable. The earnout payable recorded at December 31, 2018 was $12.2 million which was based on the actual adjusted EBITDA for Ambrell for 2018.

Income Taxes

Deferred tax assets are analyzed to determine if there will be sufficient taxable income in the future in order to realize such assets. We assess all of the positive and negative evidence concerning the realizability of the deferred tax assets, including our historical results of operations for the recent past and our projections of future results of operations, in which we make subjective determinations of future events. If, after assessing all of the evidence, both positive and negative, a determination is made that the realizability of the deferred tax assets is not more likely than not, we establish a deferred tax valuation allowance for all or a portion of the deferred tax assets depending upon the specific facts. If any of the significant assumptions were changed, materially different results could occur, which could significantly change the amount of the deferred tax valuation allowance established. As of December 31, 2018 and 2017, we had a net deferred tax liability of $2.7 million and $2.6 million, respectively. Our deferred tax valuation allowance at December 31, 2018 and 2017 was $241,000 and $370,000, respectively.

Off -Balance Sheet Arrangements

There were no off-balance sheet arrangements during the year ended December 31, 2018 that have or are reasonably likely to have, a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to our interests.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

This disclosure is not required for a smaller reporting company.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Consolidated financial statements are set forth in this Report beginning at page F-1 and are incorporated by reference into this Item 8.

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Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures, as such term is defined in Rule 13a-15(e) under the Exchange Act. Because there are inherent limitations in all control systems, a control system, no matter how well conceived and operated, can provide only reasonable, as opposed to absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Our management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all error and all fraud. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Accordingly, our management has designed the disclosure controls and procedures to provide reasonable assurance that the objectives of the control system were met.

CEO/CFO Conclusions about the Effectiveness of the Disclosure Controls and Procedures. As required by Rule 13a-15(b) of the Exchange Act, inTEST management, including our CEO and CFO, conducted an evaluation as of the end of the period covered by this Report, of the effectiveness of our disclosure controls and procedures. Based on that evaluation, our CEO and CFO concluded that, as of the end of the period covered by this Report, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

During the period covered by this Report, there has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this Report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our Board of Directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

1. Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

2. Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

3. Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) on Internal Control-Integrated 2013 Framework. Based upon this assessment, management believes that, as of December 31, 2018, our internal control over financial reporting is effective at a reasonable assurance level.

This annual report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting, as such an attestation is not required pursuant to rules of the SEC applicable to smaller reporting companies.

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Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2019, or, if our proxy statement is not filed on or before April 30, 2019, will be filed by that date by an amendment to this Form 10-K.

Item 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2019, or, if our proxy statement is not filed on or before April 30, 2019, will be filed by that date by an amendment to this Form 10-K.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 201(d) of Regulation S-K is set forth below. The remainder of the information required by this Item 12 is incorporated by reference from our definitive proxy statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2019, or, if our proxy statement is not filed on or before April 30, 2019, will be filed by that date by an amendment to this Form 10-K.

The following table shows the number of securities that may be issued pursuant to our equity compensation plans (including individual compensation arrangements) as of December 31, 2018:

Equity Compensation Plan Information

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights[1]	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans[2]
Equity compensation plans approved by security holders	264,400	$ 7.54	561,600
Equity compensation plans not approved by security holders	-	-	-
Total	264,400	$ 7.54	561,600

(1) The securities that may be issued are shares of inTEST common stock, issuable upon exercise of outstanding stock options.

(2) The securities that remain available for future issuance are issuable pursuant to the Amended and Restated 2014 Stock Plan.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2019, or, if our proxy statement is not filed on or before April 30, 2019, will be filed by that date by an amendment to this Form 10-K.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2019, or, if our proxy statement is not filed on or before April 30, 2019, will be filed by that date by an amendment to this Form 10-K.

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PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The documents filed as part of this Annual Report on Form 10-K are:

(i) Our consolidated financial statements and notes thereto as well as the applicable report of our independent registered public accounting firm are included in Part II, Item 8 of this Annual Report on Form 10-K.
(ii) The following financial statement schedule should be read in conjunction with the consolidated financial statements set forth in Part II, Item 8 of this Annual Report on Form 10-K:
Schedule II -- Valuation and Qualifying Accounts
(iii) The exhibits required by Item 601 of Regulation S-K are included under Item 15(b) of this Annual Report on Form 10-K.

(b) Exhibits required by Item 601 of Regulation S-K:

A list of the Exhibits which are required by Item 601 of Regulation S-K and filed with this Report is set forth in the Exhibit Index immediately preceding the signature page, which Exhibit Index is incorporated herein by reference.

Item 16. FORM 10-K SUMMARY

None.

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Index to Exhibits

Exhibit Number	Description of Exhibit
2.1	Stock Purchase Agreement among Ambrell Holdings, LLC, Ambrell Corporation, Graycliff Private Equity Partners III LP, Hudson River Co-Investment Fund II LP and inTEST Corporation dated as of May 24, 2017 (1)
3.1	Certificate of Incorporation. (2)
3.2	Bylaws as amended and restated on April 23, 2018. (3)
10.1	Lease Agreement between Exeter 804 East Gate, LLC and the Company dated May 10, 2010. (4)
10.2	Lease Agreement between AMB-SGP Seattle/Boston, LLC and Temptronic Corporation (a subsidiary of the Company), dated October 25, 2010. (5)
10.3	Lease Agreement between Columbia California Warm Springs Industrial, LLC and inTEST Silicon Valley Corporation dated January 9, 2012. (6)
10.4	First Amendment to Lease Agreement between Columbia California Warm Springs Industrial, LLC and inTEST Silicon Valley Corporation dated November 18, 2016. (7)
10.5	Guaranty Agreements between Columbia California Warm Springs Industrial, LLC and inTEST Corporation dated January 9, 2012. (6)
10.6	Lease Agreement between Maguire Family Properties, Inc. and Ambrell Corporation dated December 19, 2017 (8)
10.7	Guaranty of Lease between Maguire Family Properties, Inc. and Ambrell Corporation dated December 19, 2017 (8)
10.8	Form of Indemnification Agreement (9)(*)
10.9	Amended and Restated inTEST Corporation 2014 Stock Plan (10)(*)
10.10	inTEST Corporation 2007 Stock Plan. (11)(*)
10.11	Form of Restricted Stock Award Agreement. (12)(*)
10.12	Form of Non-Qualified Stock Option Agreement. (12)(*)
10.13	Form of Incentive Stock Option Agreement. (12)(*)
10.14	Change of Control Agreement dated August 27, 2007 between the Company and Hugh T. Regan, Jr. (13)(*)
10.15	Change of Control Agreement dated May 5, 2008 between the Company and James Pelrin. (14)(*)
10.16	Amendment to Change of Control Agreement dated December 31, 2008 between the Company and Hugh T. Regan, Jr. (15)(*)
10.17	Amendment to Change of Control Agreement dated December 31, 2008 between the Company and James Pelrin. (15)(*)
10.18	Compensatory Arrangements of Executive Officers and Directors. (*)(16)
14	Code of Ethics. (17)
21	Subsidiaries of the Company.
23	Consent of RSM US LLP.
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a).
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a).
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Taxonomy Instance Document

101.SCH XBRL Taxonomy Extension Schema Document
101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF XBRL Taxonomy Extension Definition Linkbase Document
101.LAB XBRL Taxonomy Extension Label Linkbase Document
101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

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Index to Exhibits
(Continued)

(1) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated May 24, 2017, File No. 001-36117, filed May 24, 2017, and incorporated herein by reference.
(2) Previously filed by the Company as an exhibit to the Company's Registration Statement on Form S-1, File No. 333-26457 filed May 2, 1997, and incorporated herein by reference.
(3) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated April 23, 2018, File No. 001-36117, filed April 25, 2018, and incorporated herein by reference.
(4) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated May 10, 2010, File No. 000-22529, filed May 13, 2010, and incorporated herein by reference.
(5) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated October 27, 2010, File No. 000-22529, filed October 29, 2010, and incorporated herein by reference.
(6) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended March 31, 2012, File No. 000-22529, filed May 15, 2012, and incorporated herein by reference.
(7) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated November 18, 2016, File No. 001-36117, filed November 22, 2016, and incorporated herein by reference.
(8) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated December 19, 2017, File No. 001-36117, filed December 22, 2017, and incorporated herein by reference.
(9) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated October 2, 2017, File No. 001-36117, filed October 6, 2017, and incorporated herein by reference.
(10) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated June 27, 2018, File No. 001-36117, filed July 2, 2018.
(11) Previously filed by the Company as an exhibit to the Company's Form 10-K for the year ended December 31, 2017, File No. 001-36117, filed March 28, 2017.
(12) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended March 31, 2016, File No. 001-36117, filed May 13, 2016, and incorporated herein by reference.
(13) Previously filed by the Company as an exhibit to the Company's Form 10-K for the year ended December 31, 2007, File No. 000-22529, filed March 31, 2008, and incorporated herein by reference.
(14) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2008, File No. 000-22529, filed August 14, 2008, and incorporated herein by reference.
(15) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2009, File No. 000-22529, filed August 14, 2009, and incorporated herein by reference.
(16) Portions of this exhibit were previously filed on the Company's Current Report on Form 8-K dated March 11, 2019, File No. 001-36117, filed March 15, 2019, and incorporated herein by reference.
(17) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2016, File No. 001-36117, filed August 12, 2016, and incorporated herein by reference.
(*) Indicates a management contract or compensatory plan, contract or arrangement in which a director or executive officers participate.
(A) Copies of the exhibits which were filed with the SEC are not included in this Annual Report to Stockholders but may be obtained electronically through our website at www.intest.com or through the SEC's website at www.sec.gov.

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Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

inTEST Corporation

By: /s/ James Pelrin March 26, 2019
James Pelrin
President and Chief Executive Officer

Pursuant to the requirements of Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

/s/ James Pelrin James Pelrin, President, Chief Executive Officer and Director (Principal Executive Officer)	March 26, 2019
/s/ Hugh T. Regan, Jr. Hugh T. Regan, Jr., Treasurer, Chief Financial Officer and Secretary (Principal Financial Officer)	March 26, 2019
/s/ Robert E. Matthiessen Robert E. Matthiessen, Chairman	March 26, 2019

/s/ Steven J. Abrams Steven J. Abrams, Esq., Director	March 26, 2019
/s/ Joseph W. Dews IV Joseph W. Dews IV, Director	March 26, 2019
/s/ William Kraut William Kraut, Director	March 26, 2019

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inTEST CORPORATION

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of inTEST Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of inTEST Corporation and its subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive earnings, stockholders' equity and cash flows for the years then ended, and the related notes to the consolidated financial statements and schedule (collectively, the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis

for our opinion.

/s/ RSM US LLP

We have served as the Company's auditor since 2008.

Blue Bell, Pennsylvania
March 26, 2019

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inTEST CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share data)

	December 31, 2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	$17,861	$13,290
Trade accounts receivable, net of allowance for doubtful accounts of $233 and $213, respectively	10,563	12,166
Inventories	6,520	4,966
Prepaid expenses and other current assets	677	577
Total current assets	35,621	30,999
Property and equipment:		
Machinery and equipment	5,166	5,033
Leasehold improvements	2,341	822
Gross property and equipment	7,507	5,855
Less: accumulated depreciation	(4,790)	(4,314)
Net property and equipment	2,717	1,541
Goodwill	13,738	13,738
Intangible assets, net	14,911	16,014
Restricted certificates of deposit	175	175
Other assets	25	26
Total assets	$67,187	$62,493
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$1,787	$2,032
Accrued wages and benefits	2,921	2,781
Customer deposits and deferred revenue	1,258	886
Domestic and foreign income taxes payable	700	1,199
Earnout payable	12,167	5,355
Other current liabilities	2,585	2,166
Total current liabilities	21,418	14,419
Contingent liability for repayment of state and local grant funds received	200	-
Federal transition tax payable, net of current portion	-	436
Deferred tax liabilities	2,689	2,606
Contingent consideration liability, net of current portion	-	5,744
Total liabilities	24,307	23,205
Commitments and Contingencies (Notes 11 and 13)		
Stockholders' equity:		